User's Manual

JUXTA

Model VJ77 PC-based Parameters Setting Tool

IM 77J01J77-01E

vigilantplant.®

YOKOGAWA
Yokogawa Electric Corporation

IM 77J01J77-01E
6th Edition

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Introduction

This instruction manual describes the functions and operation of the Model VJ77 PC-based Parameters Setting Tool.

■ Configuation of This Manual

This manual consists of 11 chapters.

● Chapter 1 VJ77 PC-based Parameters Setting Tool

Gives an overview of VJ77 and describes its functions and the operating environment.

● Chapter 2 Setup

Describes how to setup the hardware and software required to use VJ77.

● Chapter 3 Basic Operation

Describes the basic operation and main windows of VJ77.

● Chapter 4 Setting Parameters

Describes how to set parameters of JUXTA instruments.

● Chapter 5 Setting a Program

Describes how to set a program for JUXTA computing units.

● Chapter 6 Uploading and Downloading Data from/to JUXTA

Describes how to upload parameter or program data inside JUXTA instruments from VJ77 and how to download the data to JUXTA instruments.

● Chapter 7 Saving Data

Describes how to save parameter or program data on a disk.

● Chapter 8 Printing Data

Describes how to print parameter or program data.

● Chapter 9 Monitoring Input/Output Values

Describes how to monitor the I/O values of JUXTA instruments and how to view the result of self-diagnosis.

● Chapter 10 Adjusting JUXTA Instruments

Describes how to adjust JUXTA instruments' input/output, how to correct the wiring resistance, and others.

● Chapter 11 Trouble shooting

Describes how to solve problems when any trouble has occurred while using VJ77.

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■ Intended Readers

This manual is intended for people familiar with the functions of JUXTA signal conditioners and capable of working with Windows, such as instrumentation and control engineers and personnel in charge of maintaining instruments and control equipment.

■ Related Documents

● Instruction manuals for individual JUXTA signal conditioners

These manuals provide information about the procedure of installation and wiring of signal conditioners and parameter lists.

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Model	Suffix code	Description
VJ77		PC-based parameters setting tool
	-E10	For use with PC/AT compatible personal computers (English version)

■ Checking the Package Contents

Make sure that the delivered package contains all of the following items.

- VJ77 PC-based Parameters Setting Tool CD ..... 1 disk
- Communication adapter ..... 1 unit
- Communication cable with 9-pin D-sub female connectors at both ends ..... 1 cable
- JUXTA communication cable (3-pin connector type) ..... 1 cable
- JUXTA communication cable (5-pin connector type) ..... 1 cable
- Adapter for modular-jack ..... 1 unit
- User's manual (IM 77J01J77-11Z1) ..... 1 copy

Documentation Conventions

■ Documentation Conventions

The following conventions are used throughout this manual:

Item	Usage
The names of named dialog boxes, windows, and views are written in title cap and refer to the exact titles.	Parameter Setting Menu dialog box Gantt view
The names of unnamed windows, dialog boxes, and views are written in all lowercase letters.	document window print preview
Commands (including buttons) in a dialog box or window and menu commands are written in **boldface**.	Click **OK**. Click **Options**. From the **File** menu, choose **Exit**.
Characters to be typed by the user via keyboard are written in `monotype font`.	Type `JUXTA` in the Model box.

WARNING

Indicates that operating the hardware or software in a particular manner may damage it or result in a system failure.

CAUTION

Draws attention to information that is essential for understanding the operation and/or features of the product.

TIP

Gives additional information to complement the present topic.

See Also

Gives reference locations for further information on the topic.

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(2) Figures and illustrations representing the displays may differ from the actual displays in regard to the position and/or display characters (uppercase or lowercase, for example), but not to an extent that impairs a correct understanding of the functions and the proper setting operation.

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● Symbols used on the product and in this manual

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Model VJ77
PC-based Parameters Setting Tool

IM 77J01J77-01E 6th Edition

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1. VJ77 PC-based Parameters Setting Tool

This chapter gives an overview of the VJ77 tool and describes its operating environment.

1.1 An Overview of VJ77 and Its Functions

1.1.1 What is VJ77?

The VJ77 PC-based Parameters Setting Tool is a software package for setting various parameters and programs of microprocessor-based JUXTA signal conditioners and computing units from a personal computer. This tool simplifies the configuration of high performance functions of JUXTA instruments. In addition, it is also possible to adjust microprocessor-based JUXTA instruments using this tool.

1.1.2 Functions

- **Parameter setting**

  Sets parameters that configure the functions of microprocessor-based JUXTA instruments.

- **Program setting**

  Sets programs of microprocessor-based JUXTA computing units.

  Programs can be edited from a PC even when offline.*

  * A state in which the PC (VJ77) and the JUXTA instrument are not connected

- **Download to/upload from the JUXTA instrument**

  Uploads parameters or program from a microprocessor-based JUXTA instrument to a personal computer, and downloads the parameters and program once loaded or a program you created, to a JUXTA instrument.

- **Data saving to disk**

  Saves parameters or program in a JUXTA instrument to the hard disk of a personal computer, etc.

- **Data printing**

  Prints parameters or program uploaded from a JUXTA instrument.

- **Input/output value monitor**

  Views the I/O values and the result of self-diagnosis of a microprocessor-controlled JUXTA instrument.

- **Adjusting JUXTA instruments**

  Adjusts inputs and outputs of a microprocessor-controlled JUXTA instrument.

1.2 Conceptual View of VJ77

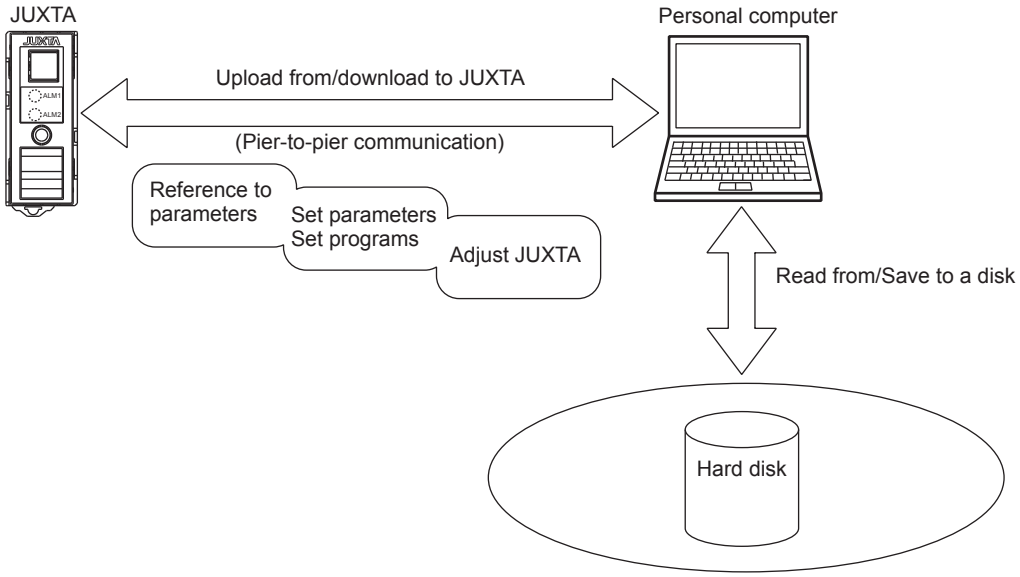

Figure 1.2.1 Conceptual View of VJ77 PC-based Parameters Setting Tool

1.3 Operating Environment and Wiring Specifications

1.3.1 System Requirements

OS:	Windows XP Professional (32-bit version) Windows 7 Professional (32-bit/64-bit version) Windows 8 Pro (32-bit/64-bit version)
CPU:	Pentium 4 series processor For Windows XP Professional: Equivalent to 2.4 GHz or higher recommended For Windows 7 Professional or Windows 8 Pro: Equivalent to 3.0 GHz or higher recommended
Main memory:	Windows XP Professional: At least 512 MB recommended Windows 7 Professional or Windows 8 Pro: At least 2 GB recommended
Hard disk space:	Windows XP Professional, Windows 7 Professional (32-bit): 600 MB (.Net Framework 4) + 10 MB Windows 7 Professional (64-bit): 1.5 GB + 10 MB Windows 8 Pro: 10 MB
CRT:	1024 × 768 pixels or better, 256 colors or more recommended
RS-232C communication port:	
	At least 1 channel, PC/AT compatible model: 9-pin D-sub connector
CD-ROM drive:	1 (required for installation)
Printer:	Required for printing, support for letter or A4 size

1.3.2 Communication Adapter

Power supply:	Supplied from RS-232C port's DTR, RTS, DCD, DSR, and CTS. However, power supply may be unavailable depending on the RS-232C port's load characteristic. In such a case, use AC adapter additionally.
Specifications of external power source:	
	Should comply with EIAJ RC-5320A
	Input ratings: 8 V DC/150 mA
Connection to personal computer:	
	Straight cable with 9-pin D-Sub connectors (female) at both ends is required for connecting via the RS-232C port.
Insulation resistance:	100 MΩ or more (500 V DC) to connect to an RS-232C port and JUXTA instrument.
Dielectric strength:	500 V AC for 1 minute to connect to an RS-232C port and JUXTA instrument.
Ambient temperature:	0 to 50°C
Ambient humidity:	5 to 90%RH (no condensation)
Transport and storage conditions:	-40 to 70°C, 5 to 95%RH (no condensation)
Dustproof and waterproof construction:	None

1.4 External View of Communication Adapter

Unit: mm

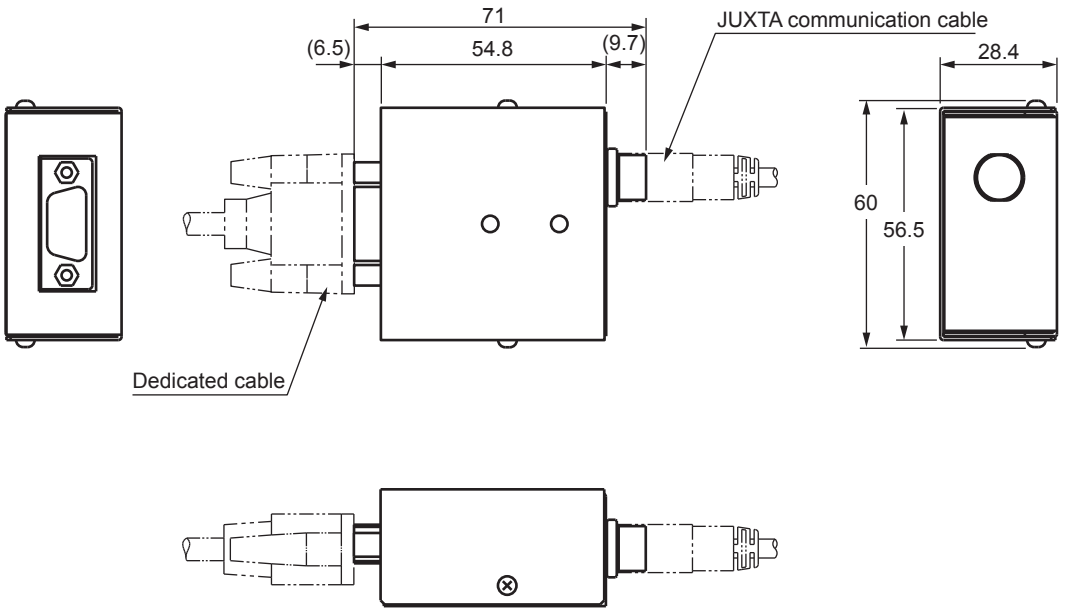

Figure 1.4.1 External View of the Communication Adapter

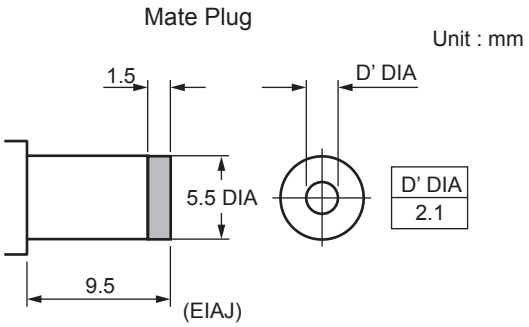

Figure 1.4.2 External View of the External Power Inlet on the Communication Adapter

1.5 Precautions When Communicating with JUXTA

CAUTION

Do not remove the communication cable while communicating with a JUXTA instrument.

Communication may be in progress in the following windows.

- Communication execution window
- Parameter setting window
- Parameter view window
- Program setting window
- Parameter Setting dialog box
- Program Editor dialog box
- Constant Setting dialog box
- Check Downloading to JUXTA dialog box
- Command Check Error list dialog box
- SLOT No. Setting dialog box

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2. Setup

This chapter describes how to set up the hardware and software required to run VJ77.

2.1 Installing VJ77

CAUTION

- Logon in Windows XP:
  - Log on using the user name of Administrators group.
  - The program does not start normally if the user name not belonging to the Administrators group is used for logging on.
- In Windows 8/Windows 7, install the software as an administrator.
- In Windows 8/Windows 7, do not save VJ77 user file in Program Files folder. The VJ77 will not work properly.

  Also if VJ77 user file save directory is set in Program Files folder on Windows XP personal computer, do not upgrade its OS to Windows Vista/Windows 7.
- Before installing VJ77 Setting Software, quit all running applications.
- Avoid entering just the drive as the installation location, such as C:\. Enter the full directory path.
- When reinstalling VJ77, uninstall the installed VJ77 first, and then reinstall VJ77.
- VJ77 R1.08 (old version) and R2.xx can coexist. To use them together, install R1.08 first and then R2.xx.

Step 1 Load the VJ77 Parameter Setting Tool CD into the CD-ROM drive.

The start-up screen appears.

Note: Note: If the start-up screen does not appear automatically and the AutoPlay screen appears, click Run startup.exe to display the start-up screen.

Step 2 Click VJ77 Installation.

Note: When .NET Framework 4 is not installed on a personal computer, the license agreement for installing it appears. Click Accept.

If the User Account Control window appears, click Allow.

The VJ77 Setup Wizard appears.

Follow the instructions in the dialog boxes.

In Windows Vista/Windows 7, the User Account Control screen appears. Click Allow.

When installation is complete, VJ77 is added to the Programs submenu of the Start menu.

2.2 Uninstalling VJ77

Step From the **Start menu** of Windows, select **Control Panel** > **Programs and Features** (*1) > **VJ77** and uninstall it.

In Windows 8/Windows 7, the User Account Control screen appears. Click **Allow**.

*1: From the Start menu of Windows, select Control Panel > Uninstall a program if the control panel's display method is Control Panel Home.
In Windows XP, Add or Remove Programs.

2.3 Connecting JUXTA Instrument to Personal Computer

This section describes how to connect a JUXTA instrument to a personal computer.

2.3.1 Items Required for Connection

To connect a JUXTA instrument to a personal computer, the following are required:

(1) Personal computer with VJ77 installed

(2) Communication cable with 9-pin D-sub female connectors at both ends (comes with VJ77): E9786WK

(3) VJ77-dedicated adapter (comes with VJ77): E9789HA

(4) JUXTA communication cable (3-pin connector type) (comes with VJ77):F9182ED
Used when communicating with JUXTA F, W and M series.

(5) JUXTA communication cable (5-pin connector type) (comes with VJ77):F9182EE
Used when communicating with JUXTA D series (DSC2).

(6) Adapter for modular-jack (comes with VJ77):E9786WH
Used when communicating with JUXTA VJ and M series.

2.3.2 How to Connect

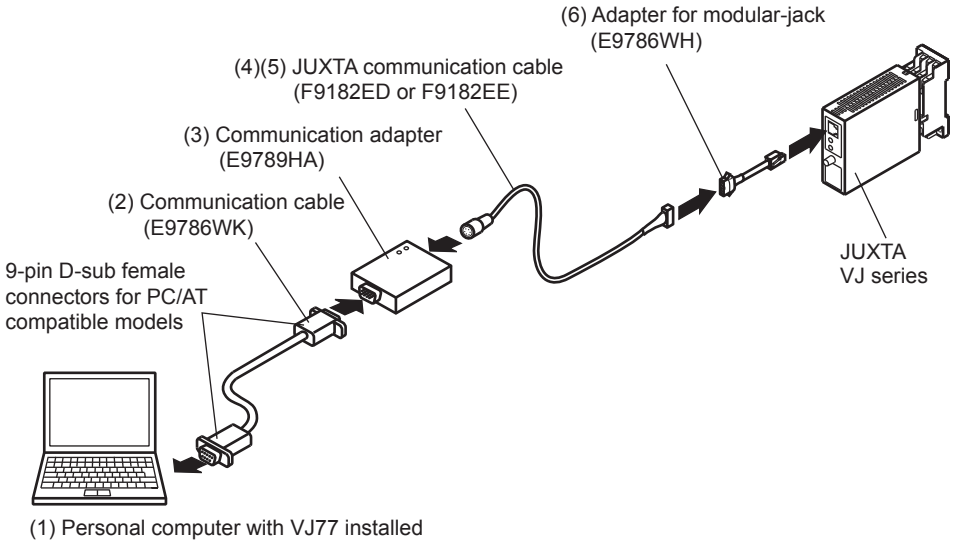
Step 1 Connect the dedicated cable (IBM PC/AT compatible cable with 9-pin D-sub) to the personal computer.
Then, connect the VJ77-dedicated adapter to the other end of the dedicated cable.

Step 2

• When communicating with JUXTA D series (DSC2), connect the JUXTA communication cable with 5-pin connector (F9182EE) to the VJ77-dedicated adapter.

• When communicating with JUXTA F, W and M series, connect the JUXTA communication cable with 3-pin connector (F9182ED) to the VJ77-dedicated adapter.

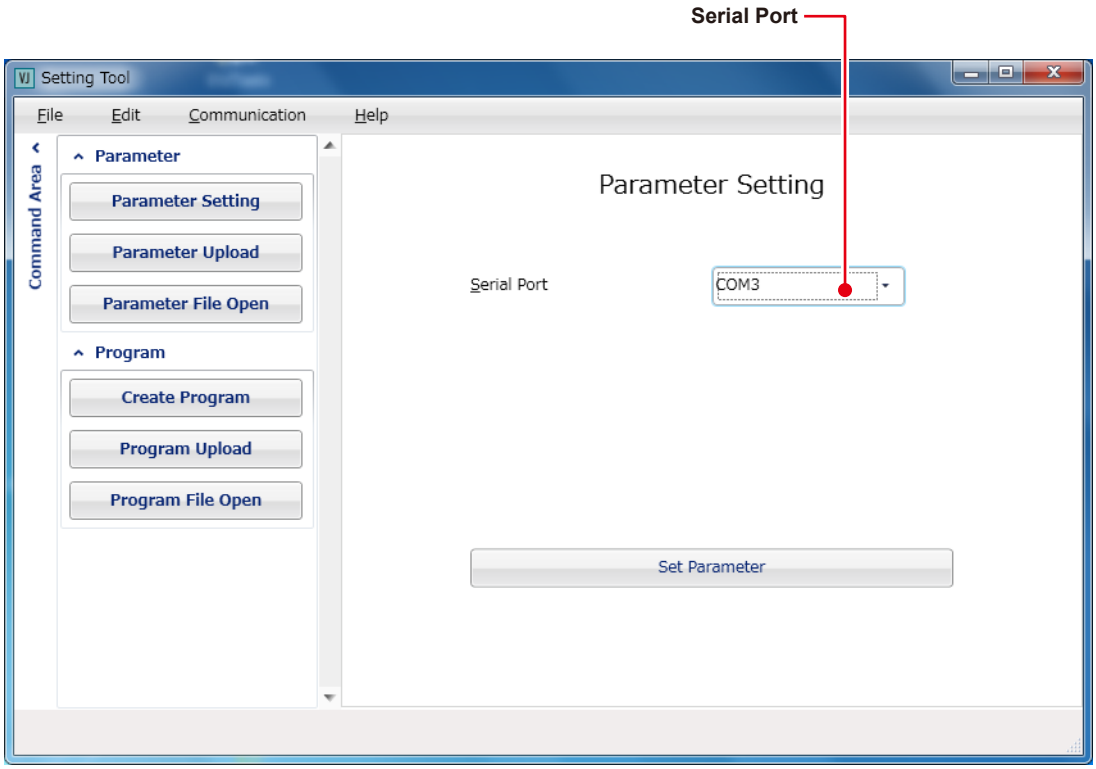
• When communicating with JUXTA VJ and M series, connect the JUXTA communication cable with 5-pin connector to the VJ77-dedicated adapter, then connect the modular jack adapter (E9786WH) to the connector of the JUXTA communication cable.



2.4 Setting the Communication Port

This section describes how to set the communication port to connect a JUXTA instrument to the personal computer (VJ77).

The communication port (serial port) indicates the valid serial port that the PC is using when a communication execution window is open.



The following five types of communication execution windows are available.

- Parameter Setting
- Upload Parameter Data from JUXTA
- Download Parameter Data to JUXTA
- Upload Program Data from JUXTA
- Download Program Data to JUXTA

3. Basic Operation

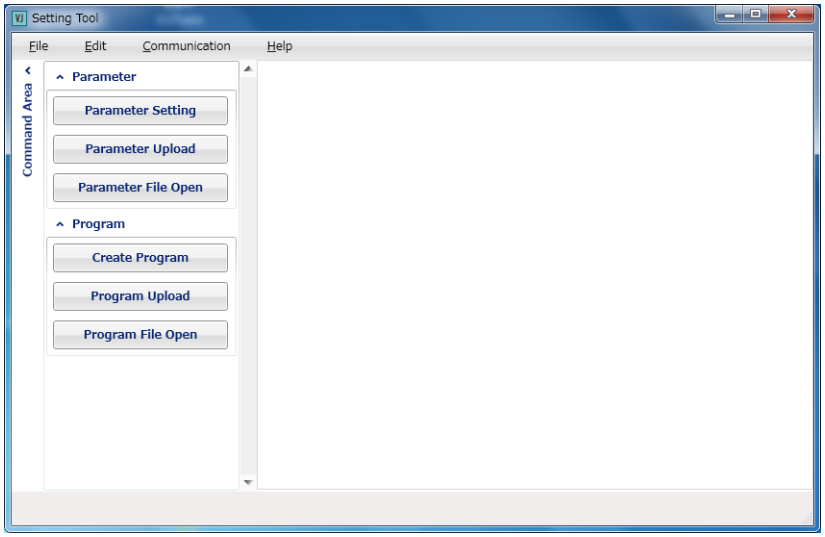
This chapter describes basic operation and identifies the main dialog boxes of VJ77.

3.1 Starting VJ77

From the Windows Start menu, choose the commands in the following sequence.

Start > Programs > VJ77 > VJ77 Setting Tool

VJ77 starts up, and the main window appears.

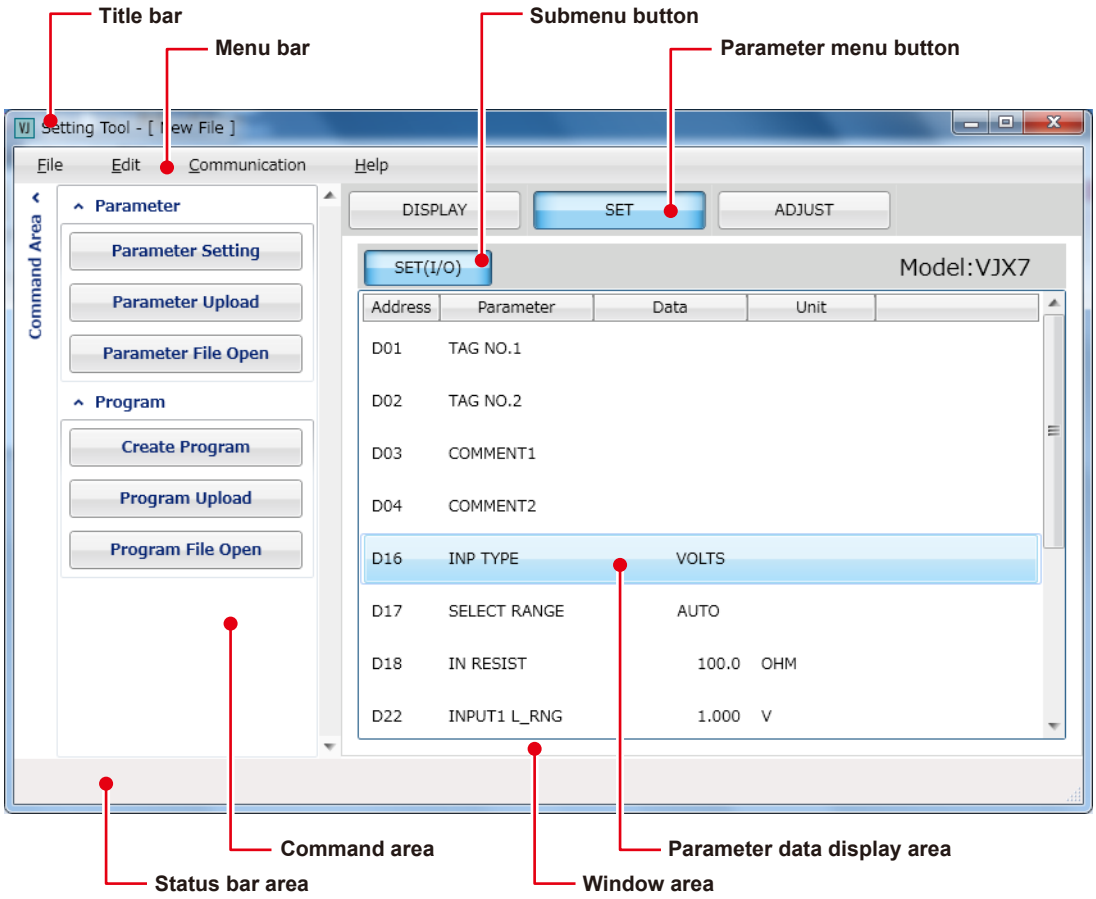


3.2 Quitting VJ77

From the File menu, choose Exit. Or, click × in the upper right of the window.

3.3 Window Elements and Functions

This section identifies the element and their functions of a window and dialog box of VJ77 with reference to the parameter setting window.



Title bar

"Setting Tool" is displayed. If file data is displayed in the window, the file name is also displayed in the title bar.

Menu bar

As is usual for Windows applications, the menu bar is displayed below the title bar of a window. Each menu name contains the related commands.

Parameter menu button

Shows the menu items read from the JUXTA instrument.

Submenu button

Shows the submenu items of the selected parameter menu.

Command area

Shows the commands that can be used on VJ77. The commands are arranged by parameter or program type.

Window area

TShows command execution windows (communication execution window, parameter setting window, program setting window, etc.).

Status bar area

Shows communication status and other temporary information.

Parameter data display area

Shows the parameters retrieved from the JUXTA instrument.

3.4 Basic Operation

3.4.1 Operation Using a Mouse

Menu bar operation

(1) Click an item on the menu bar to open a menu.

(2) From the menu, click the command you wish to execute.

Selecting an item

(1) Click the command you wish to select.

Data entry operation

(1) Double-click a data display area (parameter data display area, program display area, or CONST display area) to open a dialog box for entering data.

Parameter data display area: Parameter Setting dialog box

Program display area: Program Editor dialog box

CONST display area: Constant Setting dialog box

(2) In the Parameter Setting dialog box, after entering data, clicking WRITE updates the data. Some types of data require you to enter values in text boxes while others require you to select from drop-down lists.

CAUTION

If you click **Close** without clicking **WRITE**, any data typed in the text box will not be written to the JUXTA instrument. Be sure to click **WRITE** after you enter data.

(3) In the Program Editor and Constant Setting dialog boxes, after entering data, clicking Enter applies the data in the program display area. Writing to the JUXTA instrument is executed using the Program Download command.

3.4.2 Operation Using Keyboard

Menu bar operation

(1) Press the F10 or ALT key on the keyboard. **File** in the menu bar is displayed as a button, indicating that it is selected. Move to the menu item you wish to execute using the RIGHT ARROW and LEFT ARROW keys, then press the ENTER, UP ARROW, or DOWN ARROW key. The menu of the selected item is then displayed.
(Pressing the ALT key+F key opens the pull-down menu of **File**)

(2) In the pull-down menu, move to the command you wish to execute using the UP ARROW and DOWN ARROW keys, then press ENTER.

(3) To cancel the operation, press the ESC key.

Selecting an item

In a window, each press of the TAB key switches the selected command in turn.

Data entry operation

(1) In the data display area, after selecting an item (line), pressing Ctrl+Enter displays a dialog box for entering data.

(2) Enter the value from the keyboard.

(3) After entering data, press Tab to move the cursor to WRITE or Enter, and press Enter.

Command buttons (WRITE, Close, Cancel, etc.)

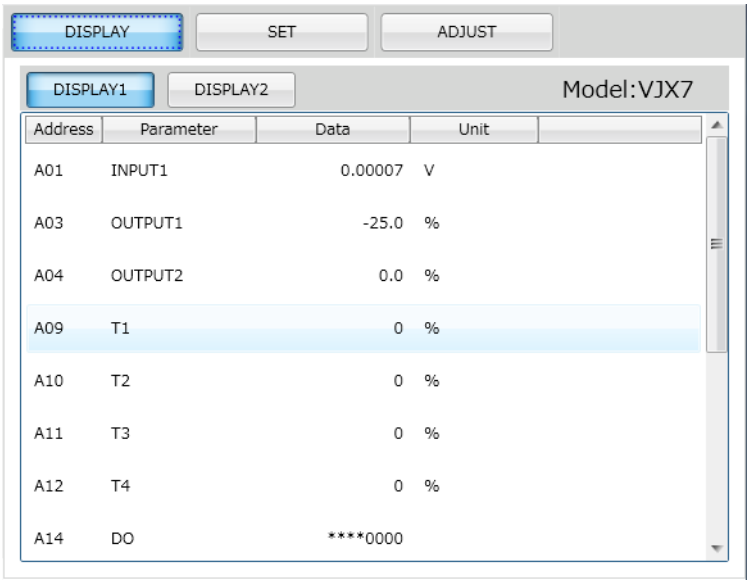
(1) Select a command button using the TAB key.

(2) Press ENTER to execute the corresponding command.

3.5 Main Windows and Their Functions

3.5.1 DISPLAY Menu Window

This window shows the input/output values of the JUXTA instrument and the results of self-diagnosis.

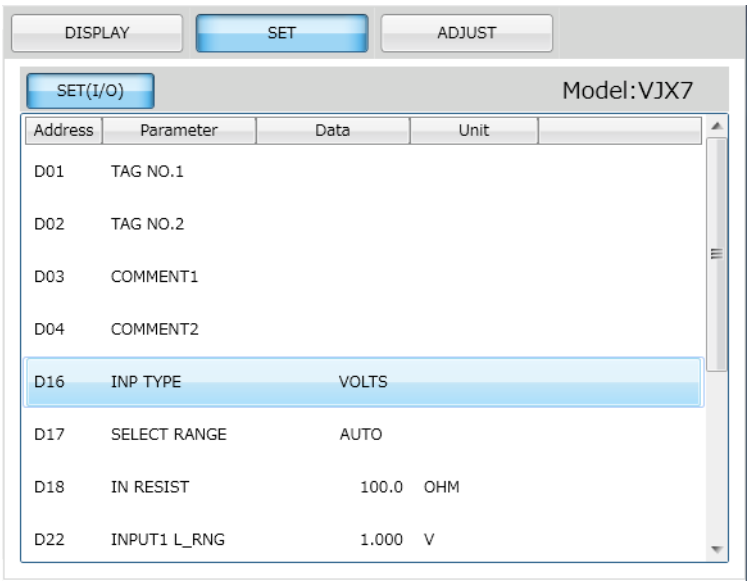


See Also

For more information about the DISPLAY dialog box, see Chapter 9, “Monitoring I/O Values.”

3.5.2 SET Menu Window

This window is used to set various parameters of the JUXTA instrument.

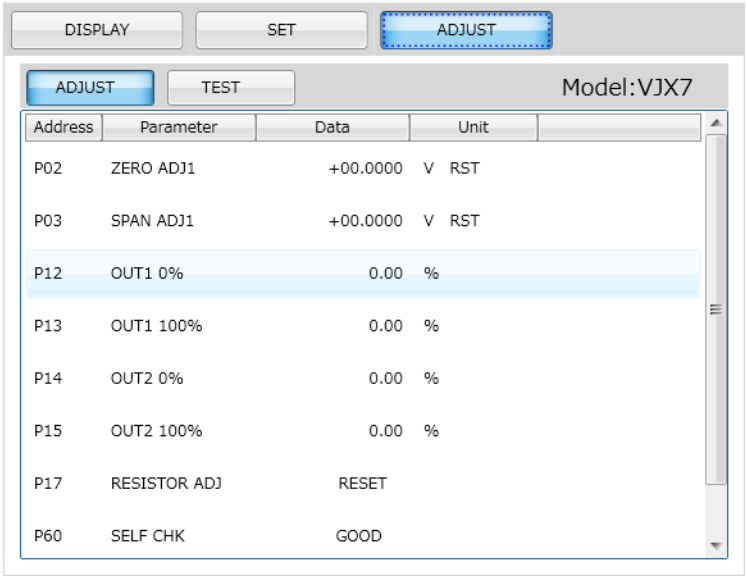


See Also

For more information about the SET dialog box, see Chapter 4, “Setting Parameters.”

3.5.3 ADJUST Menu Window

This window is used to adjust the I/O of the JUXTA instrument.

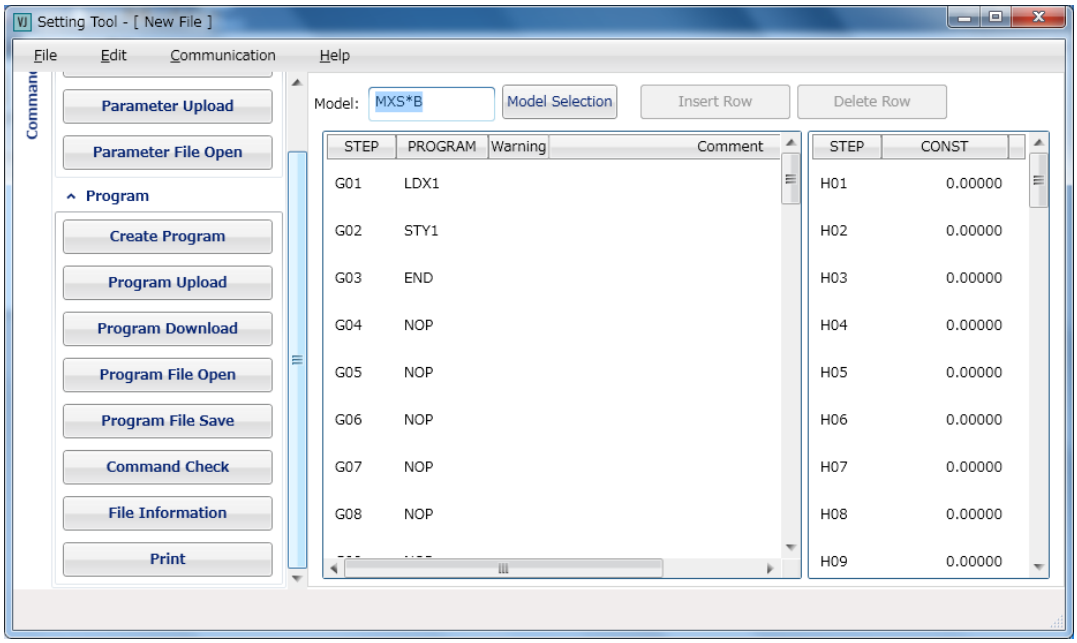


See Also

For more information about the ADJUST dialog box, see Chapter 10, “Adjusting JUXTA Instruments.”

3.5.4 Program Setting Window

This window is used to create/edit programs for JUXTA computing units.



Model Selection button

Clicking **Model Selection** selects the model name of a JUXTA computing unit.

Program display area*

Shows programs and comment data.

STEP	Shows the program step.
PROGRAM	Shows the program command.
Warning	Shows an icon when a command error occurs.
Comment	A cell for entering comments for the specified program (up to 25 characters).

CONST (constant) display area*

Shows constants for the specified program.

*: When Upload Program Data from JUXTA is executed and the Program Editor dialog box is displayed, these cells show the program and constants uploaded from the JUXTA instrument.

Insert Row button

When a line is selected in the program display area, clicking this button inserts a line above the selected line.

Delete Row button

When a line is selected in the program display area, clicking this button deletes the line.

See Also

For more information about the Program Editor dialog box, see Chapter 5, “Setting a Program.”

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4. Setting Parameters

This chapter describes the operation to set parameters of JUXTA instruments using VJ77. Parameters are set in the parameter setting window.

See Also

When you set parameters, refer to the parameter lists given in the respective user's manuals of JUXTA signal conditioners and computing units.

4.1 Displaying the Parameter Setting Window

Preparation

Connect the JUXTA instrument to the personal computer, then turn on the power to the JUXTA instrument.

Step 1 Start VJ77, and click **SET**.

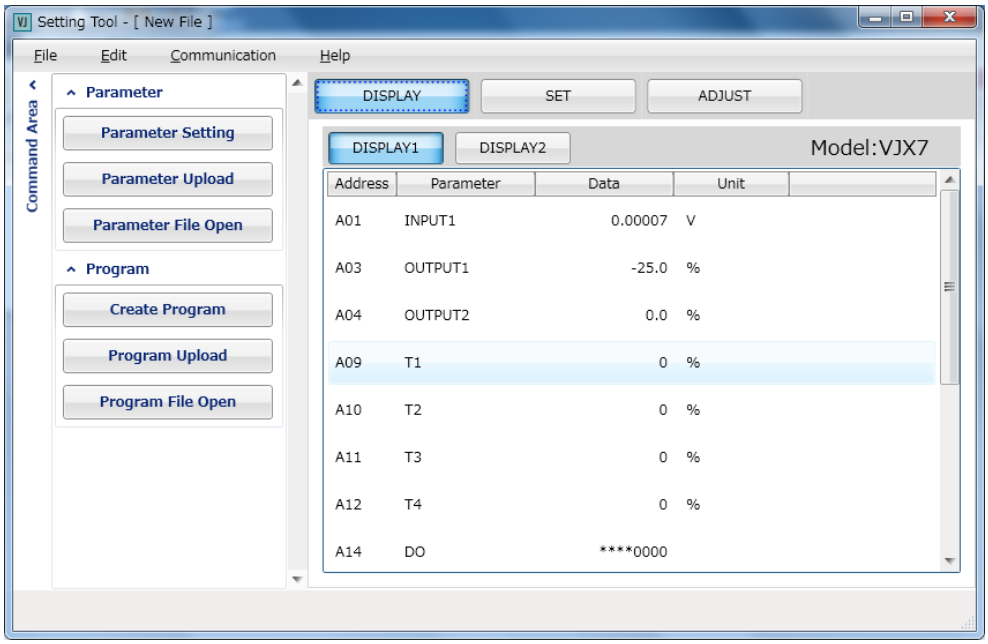
The communication execution window appears.

Step 2 Click **Parameter Setting**.

The "Starts communication. Press OK button if ready" message appears.

Step 3 Click **OK** if ready.

The parameter setting window appears.



If connected via the DSC or DSC2 port of the JUXTA D series, carry out Step 4.

Step 4 When connected via the DSC or DSC2 port of the JUXTA D series, the SLOT No. Setting dialog box appears. Enter the slot number you wish to communicate with in the entry box and click **OK**.
(Slots are numbered from 1 to 16, from the left to right of the D series nest.)

4.2 Setting Parameters

This section describes how to input individual parameter data and write the data to the JUXTA instrument from the parameter setting display (the SET dialog box).

4.2.1 Entering a Setting Value and Writing It to JUXTA

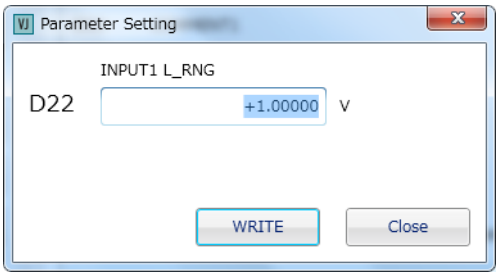
The following describes how to change the input range of JUXTA VJX7 (computing unit) with reference to the example of changing the input range from 1 to 5 V DC, to –10 to 10 V DC.

Step 1 In the Parameter Setting window, click **SET** and then **SET(I/O)**.

The SET(I/O) submenu window appears.

Step 2 Double-click the parameter **D22: INPUT1 L_RNG**.

A Parameter Setting dialog box appears.



Step 3 In the text box, type `-10` and click **WRITE.**

The new data is written to the JUXTA instrument, and the display data in the cell is updated from 1 to –10.

CAUTION

After you click **WRITE**, the data value shown in the data cell may be different from the value you entered in the text box. This is because the JUXTA instrument has limits for some of its parameters, and if the entered value is outside the limits, the instrument automatically sets the parameter to the nearest limit value.

Step 4 In the same way as Step 1 to Step 3, set the 100% value of the input range by double-clicking the data cell of **D23: INPUT1 H_RNG**.

The input range of the connected JUXTA instrument has now been changed from 1 to 5 V DC, to –10 to +10 V DC.

4.2.2 Notes on Setting Parameters

The input range/output range of a JUXTA instrument can be set in two ways, depending on the model of the instrument.

(1) Models for which 0% and 100% values of the range are set:

The high range limit and low range limit are represented as L_RNG and H_RNG, as in **INPUT L_RNG** and **INPUT H_RNG**.

(2) Models for which the span value and span of the range are set:

The 0% value and span are represented as ZERO and SPAN, respectively, as in **INP ZERO** and **INP SPAN**.

For example, to set an input range of –10 to 10 V DC:

- In case (1), set –10 for **INPUT L_RNG** and 10 for **INPUT H_RNG**.
- In case (2), set –10 for **INP ZERO** and 20 for **INP SPAN**.

WARNING

When you set the range of a JUXTA instrument, confirm the respective parameter codes to determine whether they are **L_RNG** and **H_RNG**, or **ZERO** and **SPAN**, to make sure that you set 0% and 100% values of the range or set the 0% value and span.

CAUTION

For a numeral parameter, the number of significant digits is 4. For example, if you enter 12345, the data value will be written as 12340 and if you enter 0.12345, the data value will be written as 0.12340.

4.2.3 Selecting an Item from a List Box and Writing It to JUXTA

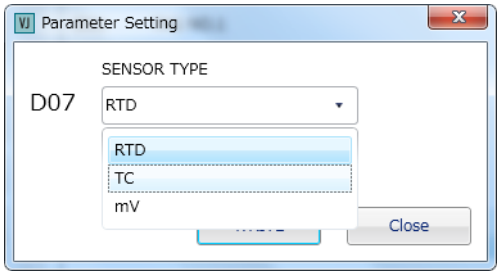
The procedure is explained with an example to change the input type of a JUXTA VJU7 (universal temperature converter) from RTD to TC.

Step 1 In the parameter setting window, click **SET** and then **SET(I/O)**.

The SET(I/O) submenu window appears.

Step 2 Double-click the parameter **D07: SENSOR TYPE**.

A Parameter Setting dialog box appears.



Step 3 Click the arrow button (▼) next to the text box, select **TC** from the list which opens, and then click **WRITE**. The change you made is written to the JUXTA instrument.

5. Setting a Program

This chapter describes the procedure to set a program for a JUXTA instrument via the program setting window.

See Also

When setting programs, refer to the parameter lists given in the documentation for the respective JUXTA computing units. For details about creating a program, see the Technical Information documents for the respective programmable computing units (document No. TI 231-01E: included in the VJ77 CD).

To set a program, do one of the following:

- Create a new program.
- Upload program data from a JUXTA instrument and modify it.
- Read program data from a file and modify it.

Whichever method is chosen, there are no major differences in operations in the program setting window. This chapter is an example of the procedure to create a new program.

5.1 Opening Program Setting Window

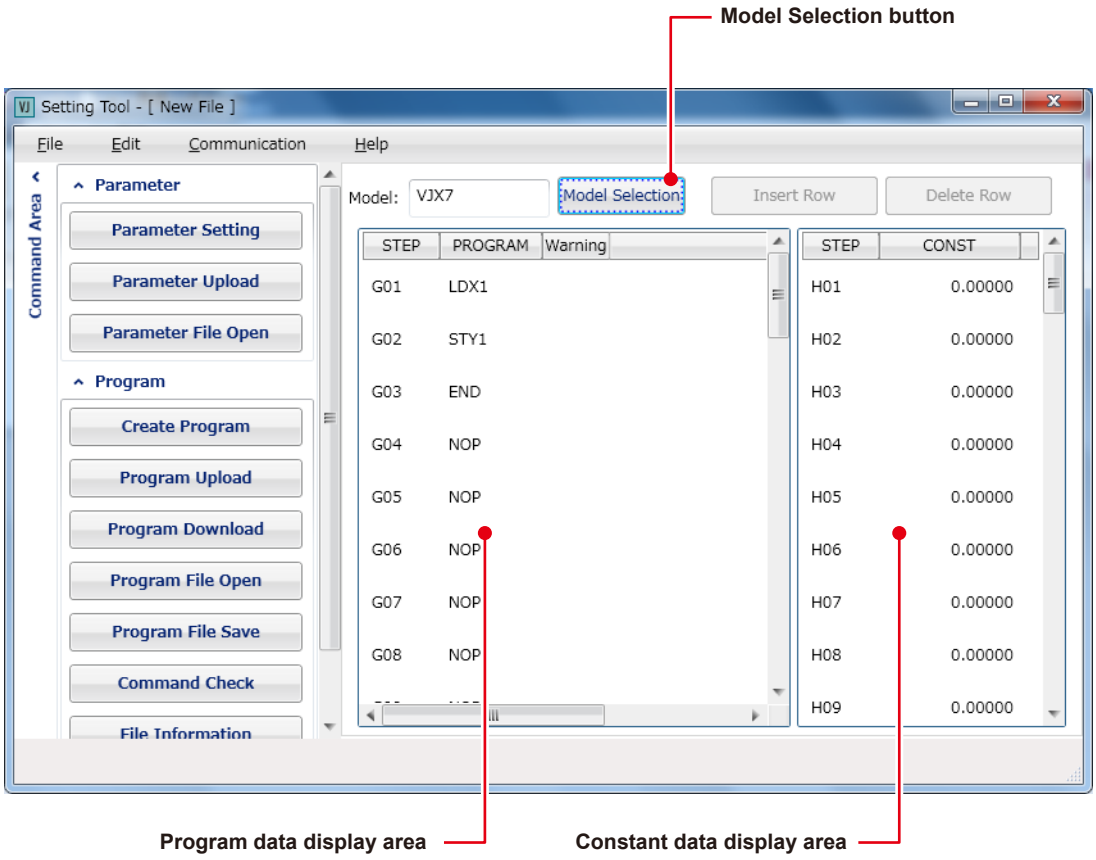
Step 1 Start VJ77.

Step 2 Click **Create Program**.

The program setting window appears.

See Also

For operations after selecting **Upload Program Data from JUXTA** or **Read Program Data from a File**, see Chapter 6, “Uploading and Downloading Data from/to JUXTA.”



5.2 Setting a Program

5.2.1 Creating a New Program

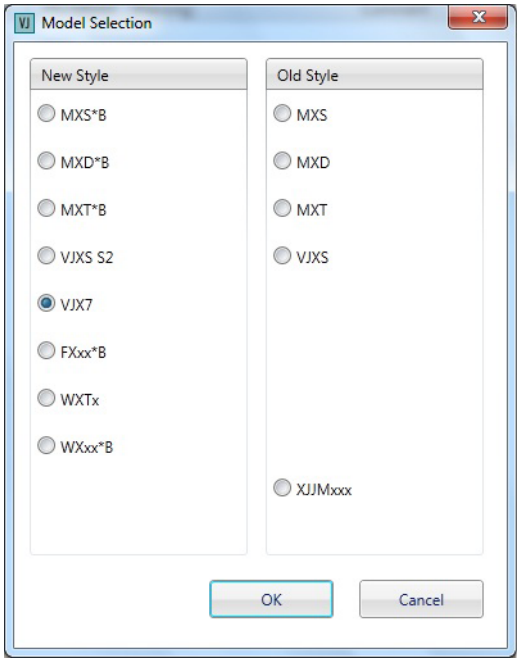
The following is an example of the procedure to set a moving average computation (of the last 100 seconds) for a VJX7 free program.

CAUTION

- When setting a program, be sure to click Model Selection button to select a model (see Step 2 in the following procedure). Selecting a model name updates the contents of the **STEP** and **CONST** columns accordingly.
- If the model name of your target instrument is not included in the list of models, click **Close** to return to the Program Setting Menu dialog box. Then, choose **Upload Program Data from JUXTA** and open the Program Editor dialog box again.

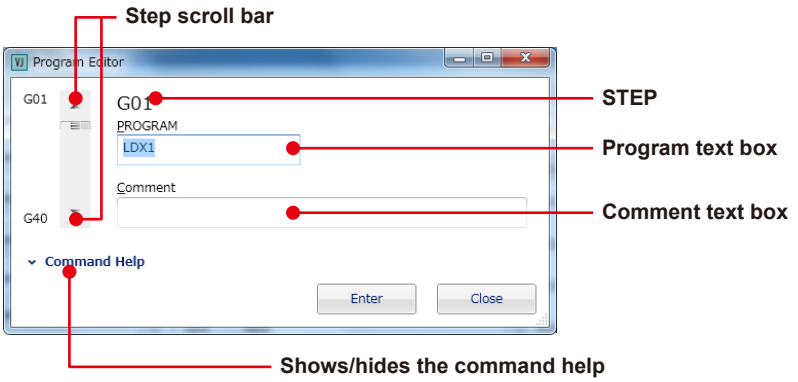
Step 1 Display the program setting window.

Step2 In the program setting window, click the **Model Selection** button and select the model name from the Model Selection dialog box. (Select VJX7 in this example) Click **OK**.

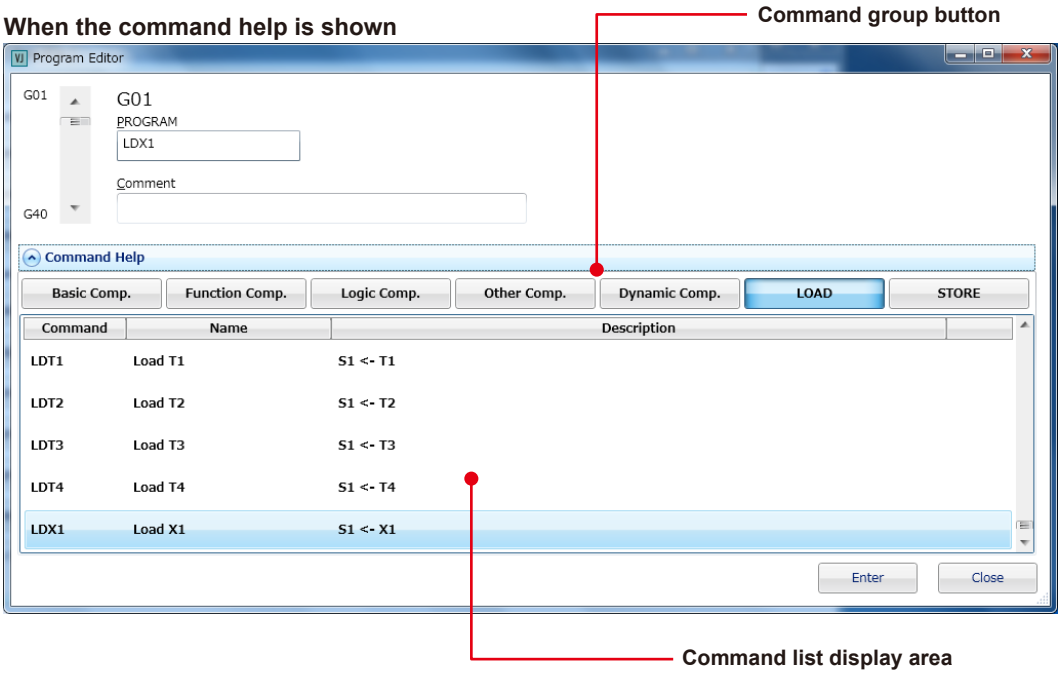


Step 3 Double-click the program display area (STEP:G01).

The Program Editor dialog box appears.



When the command help is shown



Step 4 Click the program text box under STEP:G01, type **`LDX1`**, and then click Enter.

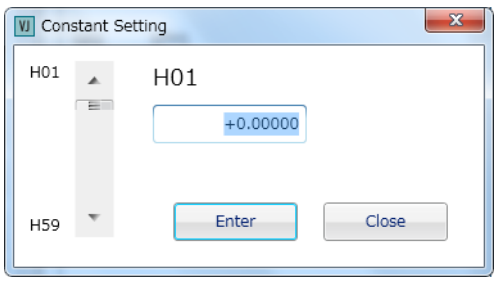
Step 5 Like step 4, enter **`LDH1`** for G02, **`MAV`** for G03, **`STY1`** for G04, and **`END`** for G05. Then, click **Enter**.

Step 6 To enter comments for each program step, type them in the comment text box.

You can enter up to 25 characters in a comment text box.

Step 7 Double-click the constant display area (STEP:H01).

A Constant Setting dialog box appears.



Step 8 Type “10” in the H01 text box, and then click Enter.

Set the moving average time span to 100 seconds (enter a percentage where 0.0 to 100.0% corresponds to 0 to 1000 seconds).

Now the program setting is complete.

CAUTION

In the Program Editor dialog box, the step numbers of program cells and the constant numbers of constant cells differ depending on the JUXTA model selected. Refer to the parameter lists given in the documentation for the respective JUXTA computing units.

WARNING

DO NOT change a program for a computing unit of the JUXTA F series and JUXTA W series other than programmable computing units. In case the unit is operated on the computing function with program changed after factory-ship, the operation will not be guaranteed.

5.2.2 Functions to Facilitate Program Coding

To insert a step:

Click the cell immediately below the position where you want to insert a step, then click **Insert Row**.

To delete a step:

Click the cell of the step you want to delete, then click **Delete Row**.

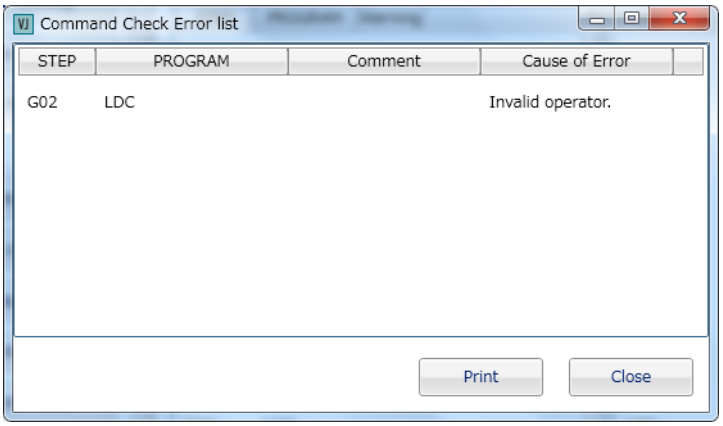
To check the syntax of the program you created or modified:

Click **Command Check**.

CAUTION

- The **Command Check** function is disabled when setting up the program of any model whose name is not listed in the Model Selection dialog box.
- The **Command Check** button is used to check the spelling of operation codes and whether the number of steps exceeds the limit.

A dialog box appears when an error is found:



To copy program code, comment, or constant to another cell:

Select a cell or characters and press the Ctrl + C keys. Then click the position to which you want to copy the contents of the selected cell or the selected characters, and press the Ctrl + V keys.

5.2.3 Converting Free (User) Program Automatically

This section explains how to convert old style MXS free (user) programs to those for the new style MXS.

Step 1 Upload free (user) program data from the JUXTA (see Section 6.1.3 for details on the uploading procedure).

Step 2 In the Program Editor dialog box, click the **Model Selection** button.

Step 3 In the Model Selection dialog box, select a new style **MXS** and click the **OK** button. Check the command after conversion because some program codes are not available depending on the model.

Step 4 Download the free (user) program to the JUXTA (see Section 6.2.2 for details on the downloading procedure).

Step 5 Save the free (user) program to the disk as necessary (see Section 7.2 for details on the saving procedure).

Automatic conversion of free programs

Free programs can be converted from older style models to new style models or vice versa, or between different models. Converting a free program automatically causes the start address name, start address number and operation code to be converted as well. Automatic conversion of free programs may not be possible, however, depending on the number of steps in the user program or on the number of fixed constants (CONST).

Example: Assume that a new style MXS user program (59 steps and 59 fixed constants) is converted to an old style MXS user program. In this case, conversion is not possible since the old style MXS can only have up to 40 steps and 44 fixed constants; therefore the number of user program steps exceeds the limit.

Old style models: MXS, MXD, MXT, VJXS, XJJMxxx

New style models: MXS*B, MXD*B, MXT*B, VJXS(S2), VJX7, FXnn*B, WXTx, WXxx*B

Converting the start address of user programs and fixed constants (CONST)

Target model to which the user program is converted	Program start address after conversion	CONST start address after conversion
FXxx*B, WXx*B	B20	C11
WXTx, MXS, MXD, MXT, VJXS, XJJMxxx	B20	C20
VJX7	G01	H01
MXS*B, MXD*B, MXT*B, VJXS(S2)	G01	H01

Converting operation code (operation code LDC before conversion and operation code LDH)

If the new style target model to which the program is converted is either the VJX7, MXS*B, MXD*B, MXT*B or VJXS(S2), the operation code LDC is converted to LDH.

If the source model whose program is converted is new style VJX7, MXS*B, MXD*B, MXT*B and VJXS(S2) and the target model is either the FXxx*B, WXTx or WXxx*B; or either the old style MXS, MXD, MXT, VJXS, VJX7 or XJJMxxx, the operation code LDH is converted to LDC.

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6. Uploading and Downloading Data from/to JUXTA

This chapter describes how to upload/download parameter or program data.

6.1 Uploading Data to Your PC

This section describes how to upload parameter or program data inside a JUXTA instrument or open a parameter file.

6.1.1 Uploading Parameter Data from JUXTA Instrument

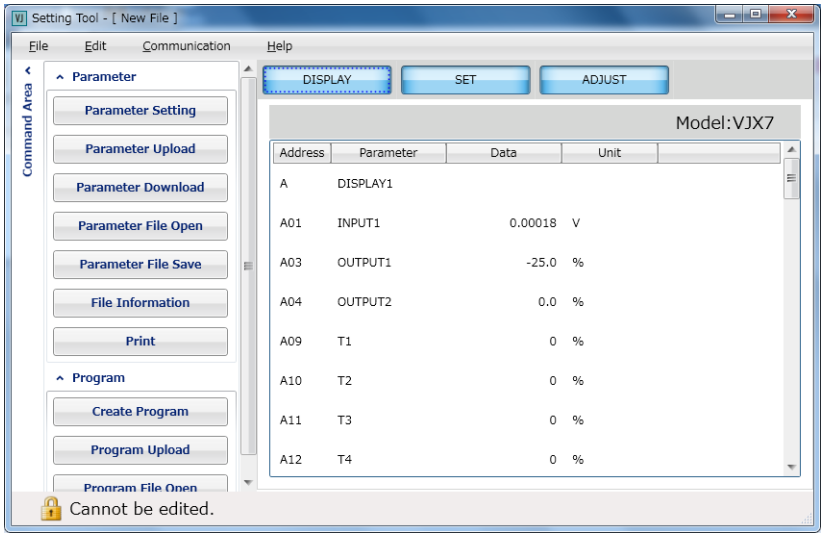
Step 1 In the main window, click **Parameter Upload**.

The communication execution window appears.

Step 2 Click **Upload Parameter Data from JUXTA.**

The “Starts communication. Press OK button if ready.” message appears. Click **OK** to upload data from the JUXTA instrument.

A parameter view window appears.



CAUTION

The parameter values in the parameter view window cannot be changed.

6.1.2 Opening a Parameter File

Step 1 In the main window, click **Parameter File Open**.

An Open dialog box appears.

Files created on the old version of VJ77 (.7pa extension) can also be loaded.

Step 2 Click the name of the file to load, and click Open.

A parameter view window appears.

See Aiso

For how to save the parameter data to disk, see Chapter 7, “Saving Data.”

6.1.3 Uploading Program Data from JUXTA Instrument

Step 1 In the main window, click **Program Upload**.

The communication execution window appears.

Step 2 Click **Upload Program Data from JUXTA.**

The “Starts communication. Press OK button if ready.” message appears.

Click **OK** to upload data from the JUXTA instrument.

A program setting window appears.

CAUTION

Only constants (CONST) are displayed for a computing unit other than programmable computing units of the JUXTA VJ series, JUXTA M series, and WXT.

See Aiso

For the how to create and modify a program in the Program Editor dialog box, see Chapter 5, “Setting a Program.”

6.1.4 Opening a Program File

Step 1 In the main window, click **Program File Open**.

An Open dialog box appears.

Files created on the old version of VJ77 (.7pr extension) can also be loaded.

Step 2 Click the name of the file to load, and click Open.

A program setting window appears.

See Aiso

For how to save the program data to disk, see Chapter 7, “Saving Data.”

6.2 Downloading Data to JUXTA Instrument

This section describes the operation to download the parameter or program data from VJ77 to the JUXTA instrument. You can copy parameter settings or a program to multiple JUXTA instruments.

CAUTION

Before you download parameter data, make sure that the model name of the JUXTA instrument selected in **MODEL** box matches with that of the product's nameplate. For some models, VJ77 cannot determine whether it is a standard product or a customized product, and a communication error may result.

6.2.1 Downloading Parameter Data to JUXTA Instrument

Step 1 In the parameter view window, click **Parameter Download**.

Step 2 Click **Download Parameter Data to JUXTA.**

The "Starts communication. Press OK button if ready." message appears. Click **OK** to download data from the JUXTA instrument.

The Now Communicating dialog box appears and shows the progress of downloading. When the download is complete, the "Downloading to JUXTA completed." message appears.

CAUTION

VJ77 only downloads the data shown in the SET menu window. Data shown in the DISPLAY or ADJUST menu window is not downloaded.

6.2.2 Downloading a Program to JUXTA Instrument

Step 1 In the program setting window, click **Program Download**.

Step 2 Click **Download Program Data to JUXTA.**

The “Starts communication. Press OK button if ready.” appears. Click **OK** to start downloading.

The Now Communicating dialog box appears and shows the progress of downloading. When the download is complete, the “Downloading to JUXTA completed.” message appears.

CAUTION

- Data in the **Comment** cells are not downloaded.
- A created program downloaded to the JUXTA computing unit other than programmable computing units is not downloaded and only constants are downloaded.

TIP

The “Error found during command check. Do you want to see the error content?” appears if the program contains any syntax error or other kind of error. Clicking **Yes** opens the Command Check Error list dialog box shown in Section 5.2.2. Or, clicking **No** downloads the data containing the program with syntax errors. In this case, each illegal program code will overwrite the corresponding current code or be written as “NOP” and the Check Downloading to JUXTA dialog box appears.

7. Saving Data

This chapter describes how to save to disk the parameter/program data that was uploaded or you created.

Parameter data and program data will be saved with the following filename extensions:

- Parameter data files: ********.7pm
- Program data files: ********.7pg
- Filename extension of CSV files: *.csv

7.1 Saving Parameter Data to Disk

Step 1 Follow the instructions in Section 6.1, “Uploading Data to Your PC” to upload parameter data.

Step 2 In the parameter view window, click **Program File Save**.

A Save As dialog box appears.

Step 3 Type the file name in the File name text box, and click **Save**.

Click File Information to display an Information dialog box. You can specify the file title, author, date, instrument serial number, and comment (up to 40 characters for the title, author, date, and instrument serial number and up 400 characters for the comment).

7.2 Saving Program Data to Disk

Step 1 In the Program Editor dialog box, click **Save to file**. The Save As dialog box opens.

Step 2 In the **File name** box of the Save As dialog box, type the file name within 16 characters and click **Save**. The Information dialog box appears. In the same way as in Section 7.1, set the file information and click **OK**. The file is saved to disk.

7.3 Saving Comma-separated Value File to Disk

Parameters and programs can be saved to CSV files.

Step 1 In the Save As dialog box, set Files of type to CSV files.

Step 2 In the Save As dialog box, type the file name in the File name text box, and click **Save**.

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8. Printing Data

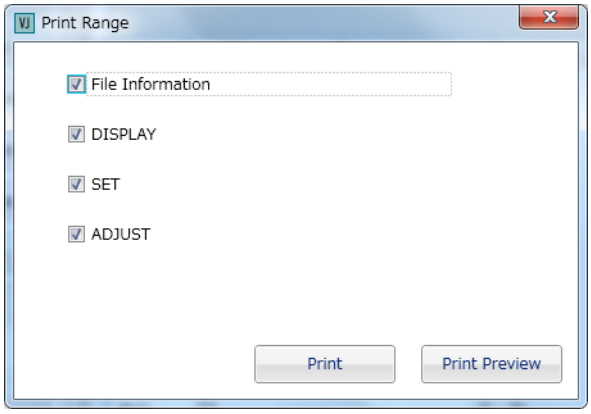
This chapter describes how to print the parameter or program data.

8.1 Printing Data

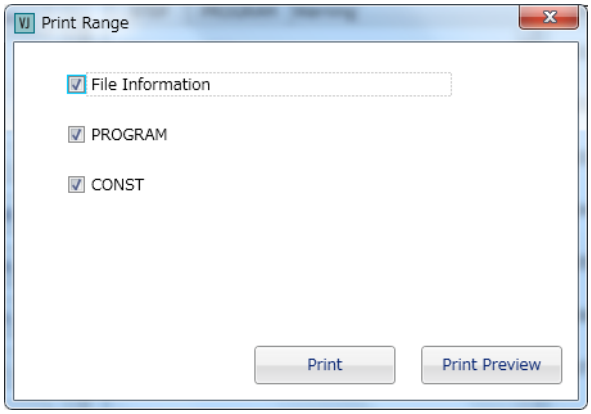
Step 1 To print parameters, click Print in the parameter view window. To print the program, click Print in the Program Setting window.

A Print Range dialog box appears.

Printing parameters



Printing a program



Step 2 The Print dialog box appears. You can select the ranges of items to be printed by selecting and clearing the check boxes. Then, click **Print** to start printing.

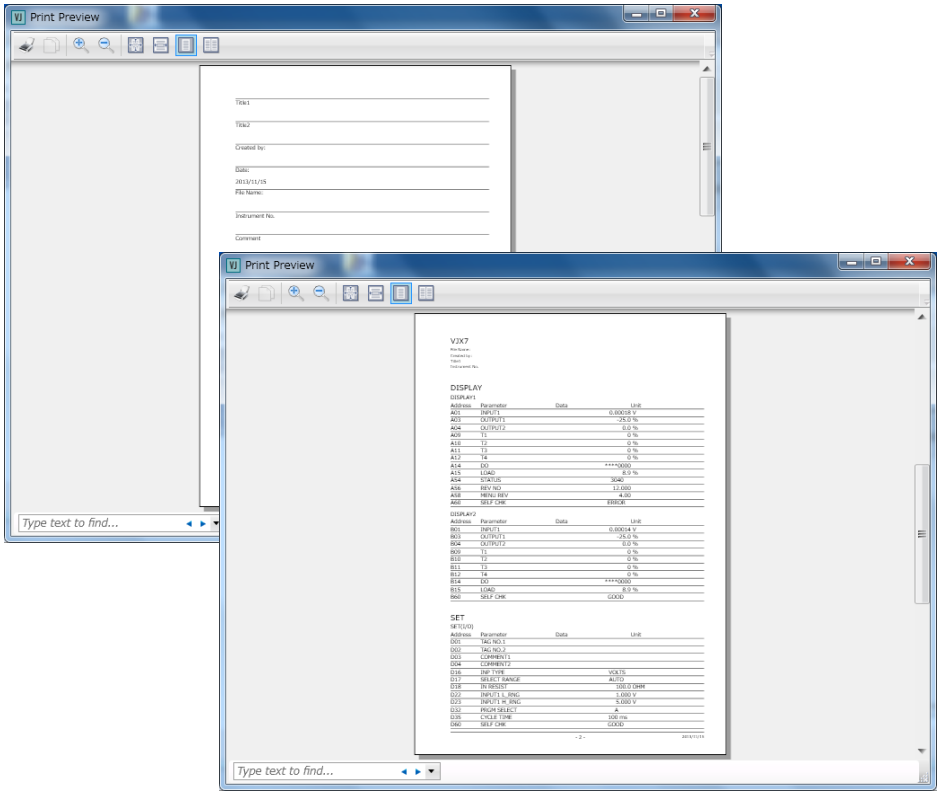
8.2 Previewing the Print Image

This section describes how to view the print image.

Step In the Print Range dialog box, click **Print Preview**.

A Print Preview dialog box appears. If there are multiple pages, you can use the scroll bar to turn the displayed page.

Close the Print Preview dialog box to return to the parameter view window or Program Setting window.



9. Monitoring I/O Values

This chapter describes how to monitor input/output values of a JUXTA instrument and the self-diagnosis result. You can monitor this information via the DISPLAY menu window.

9.1 Opening the Monitor Dialog Box

Preparation

Connect the JUXTA instrument to the personal computer, then turn on the power to the instrument.

Step 1 Start VJ77, and click **SET** in the main window.

The communication execution window appears

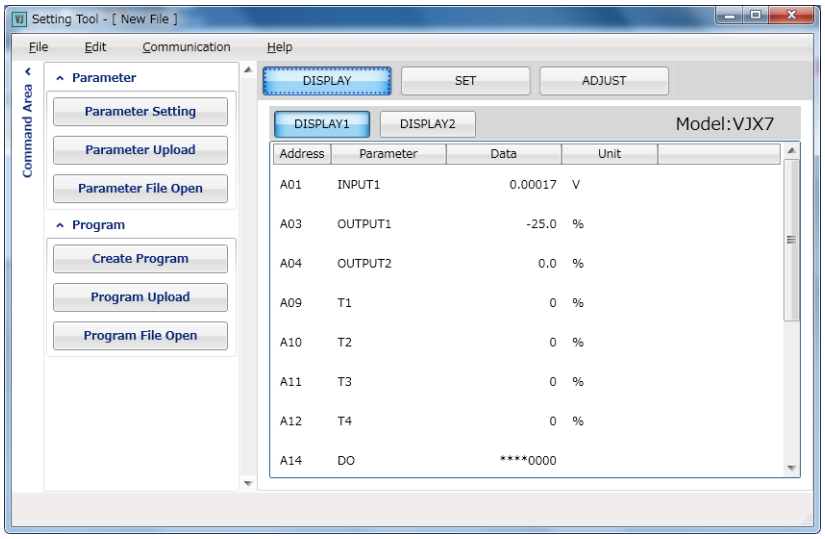
Step 2 Click Parameter Setting.

The “Starts communication. Press OK button if ready” message appears.

Click **OK** if ready.

A Parameter Setting window (DISPLAY menu window) appears.

Depending on the type of JUXTA instrument, two submenus, DISPLAY1 and DISPLAY2, will be displayed.



TIP

The **DISPLAY1** page or the DISPLAY dialog box without a tabbed page shows the conditions at the time of communication. However, the **DISPLAY2** page updates its display contents in approximately 5-second intervals (periodic upload for updating).

To update the display data on the **DISPLAY1** page or in the DISPLAY dialog box without a tabbed page, double-click the cell of the parameter you wish to update.

To stop the periodic upload for updating of the **DISPLAY2** page, click **READ STOP**. The button label changes from **READ STOP** to **READ START**. To resume the periodic upload for updating, click **READ START**.

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10. Adjusting JUXTA Instruments

This chapter describes how to use VJ77 to monitor input/output values of a JUXTA instrument and how to set wire resistance compensation. JUXTA adjustments are made in the ADJUST menu window of the Parameter Setting window.

10.1 Opening the Adjusting Window

Preparation

Connect the JUXTA instrument to the personal computer, then turn on the power to the instrument.

Step 1 Start VJ77 to display the main window.

Step 2 Click **SET**.

The communication execution window appears.

Step 3 Click **Parameter Setting**.

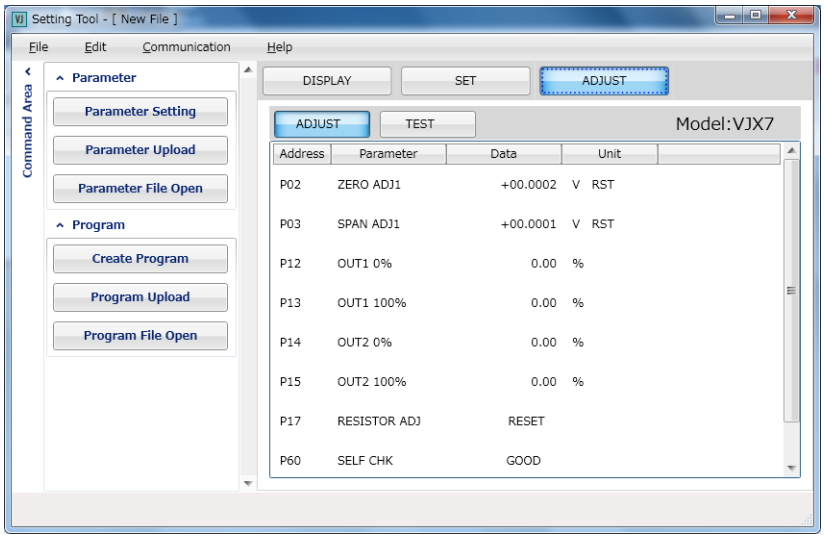
The “Starts communication. Press OK button if ready” message appears.

Click **OK** if ready.

The parameter setting window appears.

Step 4 Click **ADJUST**.

The ADJUST menu window appears.



10.2 Performing Fine Adjustment of Input

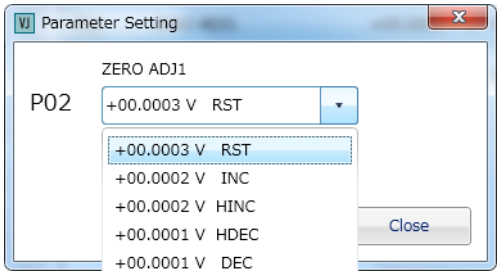
This section describes how to perform fine adjustments of inputs. The following shows an example when doing so for a JUXTA VJX7. For wiring with a calibrator or other apparatuses, see the user's manuals for respective JUXTA instruments.

10.2.1 Adjusting the Zero Point of Input

Step 1 Apply the 0% level of the input to the JUXTA instrument. If the signal level after A/D conversion in the JUXTA instrument (the value displayed in the **P02: ZERO ADJ1** data cell) and the value actually input do not match, perform the following steps to offset the zero-point shift.

Step 2 Double-click the **P02: ZERO ADJ1** data cell. The text box at the bottom of the ADJUST dialog box becomes available.

Step 3 Click the down arrow next to the text box to open a list, which contains the following:



+*.* V INC: Adds the specified voltage after A/D conversion.

+*.* V DEC: Subtracting specified voltage after A/D conversion.

+*.* V RST: Resets the value that has been adjusted by INC or DEC to 0.

HINC or HDEC: Adjusts the value by about 10 times that specified by the **+*.* INC** or **+*.* DEC** command."

Step 4 Since the value shown in the **P02: ZERO ADJ1** cell is larger than the actual input level in the example above, select **+*.* V DEC** and click **WRITE**. Repeat this procedure to complete the adjustment.

10.2.2 Adjusting the Input Span

Apply the 100% level of the input to the JUXTA instrument. If the signal level after A/D conversion in the JUXTA instrument (the value displayed in the **P03: SPAN ADJ1** data cell) and the actual input signal level do not match, you must correct the input span. The procedure is the same as above.

CAUTION

For some models, **+*.* HINC and +*.* HDEC** are not included in the list. The unit of signal differs depending on the model.

10.3 Correcting the Output

This section describes how to perform corrections of outputs. The following shows an example when doing so for a JUXTA VJH7 isolator. For wiring with a calibrator or other apparatuses, see the user's manuals for respective JUXTA instruments.

Step 1 Double-click the **P12: OUT1 0%** data cell and click **WRITE**. The 0% level is then forcedly set to the output regardless of the input level. Calculate the percent value of the deviation from zero in the reading of the calibrator. If there is a positive deviation, correct it by setting a negative percent value to offset the deviation.

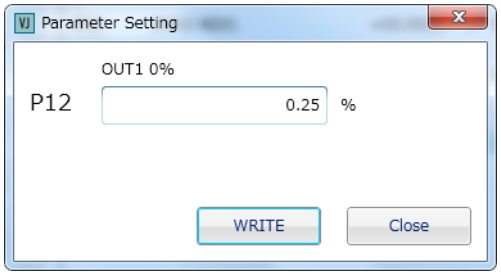
For example, provided the output signal range of the JUXTA instrument is 4—20 mA DC and the reading of the calibrator when forcibly outputting the 0% value is 3.96 mA DC, the error (%) can be calculated as follows and set the same value to the opposite polarity.

Error (%) = [(measured value – reference value)/span] × 100

= [(3.96 – 4.00)/16] × 100

= –0.25

Step 2 In this example, the output level read in step 1 showed the –0.25% deviation. Hence, you should type 0.25 in the text box and click **WRITE**. Check that the reading of the calibrator is within the range of rated accuracy and quit the procedure.



In the same way, correct the 100% output level.

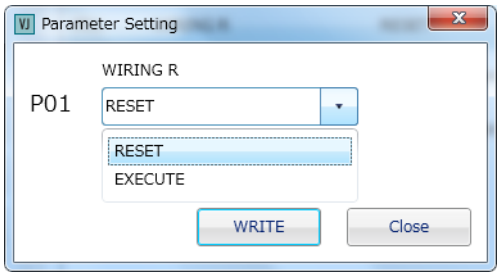
Step 3 To correct the 100% output level, double-click the **P13: OUT1 100%** data cell and follow steps 1 to 2.

10.4 Setting Wire Resistance Compensation

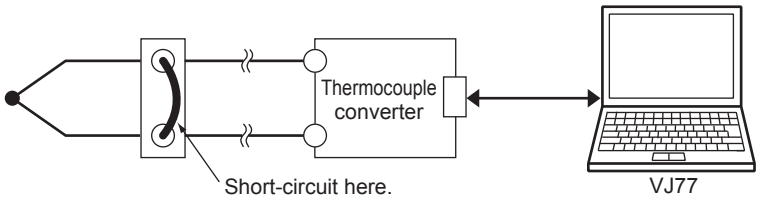
If the input wiring resistance is causing a significant error after the wiring to the field device has been completed, you can compensate for the wiring resistance with the following procedure. Change the wiring connections in the field as shown at the bottom of this page.

Step 1 When the input is stable, double-click the **P01: WIRING R** data cell.

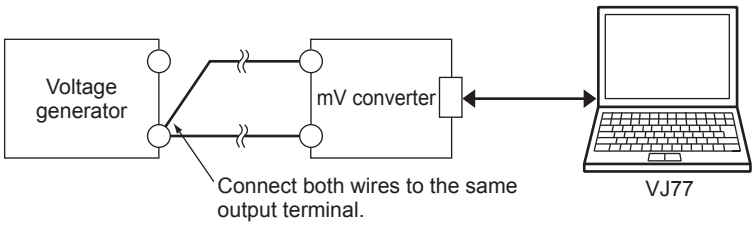
Step 2 Click the arrow next to the text box. Choose **EXECUTE** from the list and click **WRITE**. The wiring resistance is then compensated.



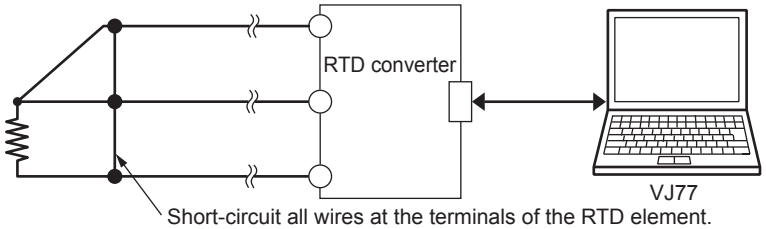
Field wiring for thermocouple converter



Field wiring for mV converter



Field wiring for RTD converter



10.5 Using the Forced Output Function

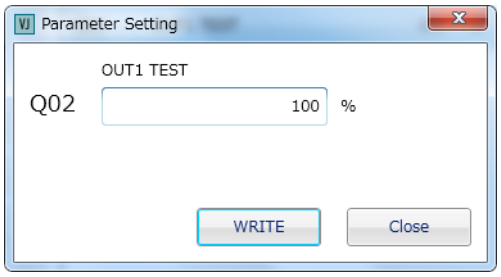
Using the forced output function allows you to perform function tests of the equipment connected to the JUXTA instrument's output terminals.

Step 1 In the ADJUST menu window, click the **TEST**.

The TEST sub menu window appears.

Step 2 Double-click the **Q02: OUT1 TEST** data cell.

A parameter setting dialog box appears.



Step 3 In the text box, enter the percent value of the level you want to output.

To output the 100% value forcedly for example, type 100 and click **WRITE**.

The 100% value is then output.

TIP

The ADJUST menu window for some models of JUXTA does not have the TEST sub menu window on which you can forcibly set an output level. Even with such models however, it is possible to output 0% and 100% levels forcedly by the same procedure as that used for output correction. To do so, double-click the **OUT 0%** or **OUT 100%** data cell and click **WRITE**.

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11. Troubleshooting

This chapter explains troubleshoot problems that may occur when running VJ77.

Symptom:	**Abnormal display**
Possible Cause:	There is a problem with the operating conditions of your computer.
Remedy:	Check whether your system meets the following requirements: • A display unit having a resolution of 1024 × 768 pixels capable of displaying 256 colors or superior is required. • Use of small fonts is recommended.

Symptom:	**The “Communication error. Check the condition.” message appears.**
Possible Cause:	The communication cable is disconnected or power is not being supplied to the JUXTA instrument.
Remedy:	Check the connection of the communication cable and the power to the JUXTA instrument.

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